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ABSTRACT

Psychometric test performances of two groups of school children were analyzed: 80 fourth graders, 40 of whom had been identified by their school district as learning disabled (LD); and 51 children referred for "possible LD placement" and diagnosed LD or not LD by school district personnel applying a severe discrepancy criteria. Results of the Wechsler Intelligence Scale for Children-Revised (WISC-R), Peabody Individual Achievement Test (PIAT), Behavior Problem Checklist, and Bender Visual-Motor Gestalt Test revealed few differences other than on selected achievement scores. Many of the LD children did not meet federal definition guidelines; many low achieving children were "LD" by these same decision rules. It was concluded that reliance on unspecified degrees of discrepancy between ability and achievement is deceiving and may be ill-founded as a basis for determining a separate category of children to receive special education services. (CL)

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Research Report No. 69

LEARNING DISABILITIES AS A SUBSET OF SCHOOL FAILURE: THE OVERSOPHISTICATION OF A CONCEPT

Bob Algozzine and James Ysseldyke

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March, 1982

Abstract

The learning disabilities (LD) field has always struggled with practical problems relative to definition and operational criteria for identification practices. To a large extent, in spite of attempts to create a more sophisticated category, LD has become a category of low achievement. The present study compared two samples of school-aged children. Some were identified as LD by their school districts, others were low achievers; few psychometric differences other than selected achievement scores were found between the groups of children. Similarly, many of the LD children did not meet operationalizations of federal definition guidelines; many low-achieving children were "LD" by these same decision rules. The results are discussed and a conceptual challenge offered to professionals of LD.

Learning Disabilities as a Subset of School Failure:

The Oversophistication of a Concept

For decades, significant numbers of students have not made adequate progress in schools. Recently, many writers and organizations (Copperman, 1978; Dearman & Plisko, 1979; Golladay & Noell, 1978; Silberman, 1970; Washington Research Project, 1978; Ysseldyke & Algozzine, 1982) have called attention to the generalized declining academic performance of America's students.

For decades, individuals and professional groups have been trying to sort out those students who evidence common characteristics from the many students who experience academic and social difficulties. The educational establishment has developed elaborate schema for classifying students who fail, and has endeavored to develop specific curricula for specific "kinds" or "types" of students. Nowhere is this more evident than in efforts on behalf of students we now call "learning disabled." In the 1940s, Strauss and Lehtinen developed procedures to identify and teach exogeneous and endogenous mentally retarded students. In the 1950s and early 1960s, Cruickshank and his colleagues developed procedures to identify brain-injured students. In the early 1960s, Kephart and his colleagues developed procedures to identify and teach "slow learners," and Kirk coined the term "learning disabilities" to refer to a group of students of essentially average intelligence who failed to make adequate progress in school. In the mid-1960s, the Federal government developed a definition of a category of handicapped students: learning disabled students.

All along, the presumption has been that a specific subgroup of students failing in school could be identified reliably, and that their identification would lead to the development of appropriate educational programs for them. They were presumed somehow to be different from other kinds or types of students who were failing because they had "specific learning disabilities."

Early definitions of learning disabilities stressed that the common characteristic of learning disabled students was a disorder in one or more psychological processes. Process disorders were thought to cause the achievement problems common in students called "learning disabled." Yet, the search for and treatment of elusive process disorders was largely fruitless and frustrating (Mann, 1979).

Currently, process disorders are mentioned in the federal definition of learning disabilities, although educators no longer must identify process disorders. Now a team of professionals may determine that a student has a specific learning disability if:

> 1. The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in [the] paragraph...[below]...this section, when provided with learning experiences appropriate for the child's age and ability levels; and
>
> 2. The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas: oral expression; listening comprehension; written expression, basic reading skill; reading comprehension; mathematics calculation; or mathematics reasoning. (USOE, 1977, p. 65082)

In spite of many revisions of the federal definition of LD, LD has remained underachievement (relative to measured intellectual ability) in one or more of several academic areas. It is important to note,

however, that the extent (i.e., severity) of the underachievement is not specified in the federal guidelines; it is only suggested that a "severe discrepancy" is critical.

Recently, the National Joint Committee on Learning Disabilities (NJCLD) met to consider a new definition of LD (Society for Learning Disabilities and Remedial Education, 1980). The NJCLD is composed of representatives from various groups and professional organizations concerned with learning disabilities (e.g., Division for Children with Learning Disabilities of the Council for Exceptional Children, International Reading Association, the Orton Society, etc.). The committee members generally were concerned with the current federal definition and expressed dissatisfaction with it for several reasons:

> First, the definition stresses that learning disabled persons must have a "psychological process disorder," an obscure concept at best. Second, the "exclusion clause" implies that learning disabled individuals cannot be multihandicapped, a patently erroneous implication. Third, it ignores the existence of learning disabilities in adolescent and adult populations, an embarrassing oversight. Fourth, it includes too many terms that have ill-defined meanings. (Society for Learning Disabilities and Remedial Education, 1980, p. 4)

In an attempt to overcome some of the definitional problems, the NJCLD drafted a new definition. It indicates that a learning disability is:

> a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, or mathematical abilities. These disorders are intrinsic to the individual. (Such disorders are presumed to be due to central nervous system dysfunction which can result from such factors as anatomical differences, genetic factors, neuromaturational delay, neurochemical/metabolic imbalance, severe nutritional deficiency, or trauma). Even though a

> learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g., cultural differences, insufficient/inappropriate instruction, psychogenic factors), it is not the direct result of those conditions or influences. (Society for Learning Disabilities and Remedial Education, 1980, p. 4)

This definition clearly implies that LD is a condition of low achievement intrinsic to the individual, though not resulting primarily from other categorical conditions intrinsic to the individual. Given that LD has become (and may always have been) a category for treatment of low achievement, the question of differences between general school low achievement and LD becomes important.

The extent to which LD children can be differentiated from low achievers and the nature of identified differences was the subject of this research. Specifically, two samples of low achievers (some of whom were identified as LD) were compared on selected psychometric variables and eligibility criteria.

Method

Subjects

Psychometric test performances of two groups of school children were analyzed.

Sample 1. The first sample consisted of 80 fourth grade children; 40 had been identified by their school district personnel as LD. Exact criteria for identification were unknown (as is usually the case); however, it was assumed that some operationalization of the current federal definition was the basis for the decision making in the particular district. The other 40 fourth graders had not been identified as learning disabled (NOTLD) but they had all scored at or below the 25th percentile on the group achievement test administered in their district

during the fall of that current school year (i.e., they were low achievers not identified as LD).

Sample 2. The second sample consisted of 51 children referred for "possible LD placement" and diagnosed as LD or NOTLD by school district personnel who applied the "severe discrepancy" criteria recommended by Woodcock (1978). Woodcock suggests that the "cluster difference score and relative performance index" (RPI) derived from pupil performance on the Woodcock-Johnson Psycho-Educational Battery "may have utility in definitions of a performance deficit or disability" and offers several "functioning level" labels for various difference scores and RPIs (Woodcock, 1978, p. 65). Children identified as LD in this second sample had cluster difference scores on the Woodcock-Johnson Psycho-Educational Battery (Woodcock & Johnson, 1977) greater than or equal to 26 points or RIP's of 0/90 to 34/90. Selected demographic characteristics and standardized test scores of both groups of children are presented in Table 1.

Insert Table 1 about here

Procedure

Tests administered. The Wechsler Intelligence Scale for Children - Revised (WISC-R) and Peabody Individual Achievement Test (PIAT) were administered to each child. Additionally, teachers' ratings on the Behavior Problem Checklist (Quay & Peterson, 1967) and scores on the Bender Visual-Motor Gestalt Test (Bender, 1938) were available for children in Sample 1. These tests were considered typical of those used in psychoeducational assessment practices with learning disabled children. In fact, in a survey conducted by Thurlow and Ysseldyke (1979), the

WISC-R and PIAT were identified as devices used "more than 'frequently' for at least one purpose: PIAT for placement and pupil evaluation, WISC/WISC-R for placement" (p. 19).

Operationalization of LD criteria. To evaluate eligibility of LD children, the current federal guidelines were operationalized in three ways:

1. If the difference between a child's WISC-R Full Scale IQ and his/her standard score on any PIAT achievement subtest (i.e., Mathematics, Reading Recognition, Reading Comprehension, Spelling) was greater than or equal to one standard deviation (i.e., 15 points), then a classification decision of LD was recorded.

2. If the difference between a child's WISC-R Full Scale IQ and his/her standard score on any PIAT achievement subtest was greater than or equal to one and one-half standard deviations (i.e., 23 points), then a classification decision of LD again was recorded.

3. If the difference between WISC-R ability and PIAT achievement was greater than or equal to two standard deviation units (i.e., 30 points), an LD classification again was recorded.

The numbers of children meeting each of these operational standards for the current federal definition and guidelines were compared; relations between school decisions and those obtained using federal standards were evaluated.

Results

Means and standard deviations (SD) for ability, achievement, and other measures are presented in Table 2; scores for children in each sample are indicated. A series of independent *t* tests was completed between scores of LD and NOTLD children in both samples. Reading, spelling, and general information scores for LD children in the first group were significantly ($p < .01$) lower than those of

the low-achieving comparison peers; in most cases, approximately one standard deviation unit difference separated the two groups of "low achievers." Reading and spelling scores differed for the children identified using the Woodcock criteria for eligibility decision making (Sample 2); again, the LD children performed approximately one standard deviation below their low-achieving peers.

Insert Table 2 about here

The distributions of WISC-R Full Scale IQ and PIAT Total Achievement scores are presented in Figure 1. Although the total achievement of the NOTLD children was higher ($p < .01$), many similarities existed between the ability and achievement scores of LD and NOTLD children. For example, the median Full Scale IQ was 101.00 for the LD children and 102.50 for the NOTLD children in Sample 1. These scores ranged from 79 to 133 for LD children and from 78 to 122 for NOTLD children. There were many instances of exact duplicate scores across LD and NOTLD students in both samples (see Figure 1).

Insert Figure 1 about here

Classification decisions using three operationalizations (1.0, 1.5, 2.0 SD discrepancies) were compared for each sample of children; the numbers and percentages of children classified LD or NOTLD are presented in Table 3. Of course, fewer children were classified by more stringent (e.g., 1.5, 2.0 SD) criteria. However, in general, similar numbers of children were classified in each sample.

Insert Table 3 about here

The breakdown of classification decisions for LD and NOTLD children is presented in Table 4; accurate and inaccurate decisions can be evaluated from this information. For example, 28 LD children in the first sample were identified as LD; they represented 61% of the 46 children who had at least one standard deviation discrepancy between ability and achievement scores as operationalized here. Similarly, 12 of the LD children in Sample 1 did not meet the 1.0 SD eligibility criteria; they represented 35% of the 34 children who were "not learning disabled"; these cases were considered to be instances of inaccurate decision making. The most accurate decisions were made for the LD children in Sample 1; six of the eight (75%) children that met the 2.0 SD criteria in that sample had been diagnosed as LD by their school district. The least accurate decisions were made for NOTLD children in Sample 2; six children met the 2.0 SD criterion, but four (67%) of them were classified as NOTLD by the Woodcock (1978) severe discrepancy criteria.

Insert Table 4 about here

Discussion

Half of all school children who take any test will fall below the median for their group; many, depending on the shape of the distribution of scores, will fall below the mean.[1] These students could be called low achievers. Application of criteria based on other

statistics (i.e., standard deviation) may reduce the number of children who are "not achieving." However, the simple fact remains that many children do not achieve in school. When we add the notion of achievement commensurate with ability we simply cloud the issue.

No children in these two samples had achievement scores more than two standard deviations below the mean established for the test used (i.e., 100); in fact, the groups' achievement performances were reasonably average (Sample 1 $\bar{X}$ = 96.63, Sample 2 $\bar{X}$ = 95.09. Similarly, their "abilities" were within normal limits (Sample 1 $\bar{X}$ = 101.98, Sample 2 $\bar{X}$ = 95.40). Problems (e.g., so-called disabilities) arise when we create a distinction based on discrepancies between ability and achievement. In fact, we know very little about the distribution of discrepancies in the general population; their use has been criticized (cf. Salvia & Clark, 1973; Salvia & Ysseldyke, 1978). To make classification dependent on these discrepancies seems somehow arbitrary and capricious. Many children have such discrepancies in their performance; many do not. Interestingly, children with and without discrepancies are classified as LD by their school districts.

Some differences were indicated between children classified as LD by their school district and peers not similarly identified. The LD children performed lower in some achievement areas. Since the children demonstrated similar "abilities" (e.g., IQ scores), discrepancies in LD children seem more pronounced based on their low achievement. However, many low-achieving children also had "significant" discrepancies between their ability scores and their achievement.

The current reliance on unspecified degrees of discrepancy between ability and achievement is deceiving and may be ill-founded as a basis for a separate category of children to receive special education services. In fact, there may be an equally large number of children exhibiting similar degrees of school achievement not commensurate with their measured ability who are not categorized and thereby are not receiving special education services although eligible for them under the current conceptual scheme of LD. Professionals in the learning disabilities field (such as NJCLD and others) should either recognize underachievement per se as a problem and treat it in whomever it occurs or conceptualize and define a category of children different from their low-achieving peers.

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Footnotes

Bob Algozzine is also an Associate Professor in Special Education at the University of Florida, Gainesville. The authors acknowledge Leila R. Cantara and Patricia C. Abblett for their professional assistance in preparing the manuscript and Mark Shinn for collectio, and tabulation of some of the information. The assistance of the Duluth Public Schools in providing some of the data is gratefully acknowledged.

[1]This may state the obvious; however, the authors have been asked by school personnel to "figure out why half their students were below average."

Table 1

Demographic Characteristics of Participating Subjects

	Sample 1[a]				Sample 2[b]			
	LD		NOTLD		LD		NOTLD	
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD
WISC-R Full Scale IQ	100.68	12.62	103.28	9.63	96.50	11.37	94.30	10.73
WISC-R Verbal IQ	98.33	12.41	101.98	8.95	91.75	13.02	91.85	12.40
WISC-R Performance IQ	103.55	13.59	104.33	11.33	102.38	11.62	98.81	11.51
PIAT Total Achievement	92.33	9.23	100.93	6.01	93.33	6.58	96.85	10.23
Age (months)	121.04	5.04	121.06	4.04	100.71	19.13	112.22	22.59
Sex								
Boys	34		31		17		16	
Girls	6		9		7		11	

[a]Sample 1 N=80.

[b]Sample 2 N=51.

Table 2

Means and Standard Deviations for Children's Ability and Achievement Scores

Subtest	Sample 1 LD Mean	LD SD	NOTLD Mean	NOTLD SD	Sample 2 Mean	Sample 2 SD	NOTLD Mean	NOTLD SD
WISC-R Information	97.38	12.09	103.13	11.91	93.75	12.62	89.81	14.90
WISC-R Similarities	99.75	16.75	100.75	12.89	94.17	18.10	97.96	13.54
WISC-R Arithmetic	93.25	10.89	95.63	10.57	89.79	10.16	91.85	12.87
WISC-R Vocabulary	98.75	13.90	103.63	10.68	91.25	13.29	92.04	13.54
WISC-R Comprehension	104.23	14.98	106.13	12.06	98.75	17.34	96.11	13.03
WISC-R Picture Completion	102.38	13.35	105.50	12.34	103.75	9.92	102.04	10.94
WISC-R Picture Arrangement	106.63	16.77	106.63	12.98	106.25	13.61	102.78	13.68
WISC-R Block Design	102.83	13.20	98.13	17.71	101.88	11.87	92.41	14.10
WISC-R Object Assembly	105.13	15.92	106.63	15.29	100.92	12.47	101.30	11.06
WISC-R Coding	97.18	11.97	100.00	13.91	95.87	14.35	98.48	14.88
PIAT Mathematics	96.93	10.97	101.48	9.77	95.33	10.52	93.33	10.08
PIAT Reading Recognition[ab]	92.38	9.48	100.65	8.44	93.33	6.58	102.07	11.37
PIAT Reading Comprehension[a]	93.43	12.16	100.00	6.84	95.29	8.83	99.09	12.70
PIAT Spelling[ab]	89.23	11.15	96.03	7.89	91.50	6.39	98.81	11.70
PIAT General Information[a]	96.05	10.21	105.20	8.61	100.38	9.11	98.96	10.45
Bender Visual Motor	2.48	2.23	2.10	1.63				
QP Conduct Disorder	5.97	7.65	2.88	4.23				
QP Personality Disorder	5.65	5.05	2.88	3.18				
QP Inadequate-Immature	3.29	3.28	2.33	3.69				
QP Socialized Delinquent	0.71	1.47	0.50	0.93				

[a]Difference between means in Sample 1 was significant at .01 level.

[b]Difference between means in Sample 2 was significant at .01 level.

Table 3

Numbers and Percentages of Children Classified Using Three Operational Criteria for the Federal Guidelines[a]

Definition-Criteria[b]	Classification Decision			
	Sample 1		Sample 2	
	LD	NOTLD	LD	NOTLD
1.0 SD Discrepancy	46(58)	34(42)	29(57)	22(43)
1.5 SD Discrepancy	23(29)	57(71)	19(37)	32(63)
2.0 SD Discrepancy	8(10)	72(90)	6(12)	45(88)

[a] Percentages are given in parentheses.

[b] All discrepancies are between the WISC-R and any PIAT achievement score. The definition criteria are not mutually exclusive. For example, subjects who demonstrate a 1.5 discrepancy also demonstrate a 1.0 discrepancy.

Table 4

Comparison Breakdown of Decision Making Using Several Criteria[a]

	School Decision	Federal Decision	Criteria 1.0 SD	1.5 SD	2.0 SD
Sample 1	LD	LD	28(61) n = 46	15(65) n = 23	6(75) n = 8
		NOTLD	12(35)* n = 34	25(44)* n = 57	34(47)* n = 72
	NOTLD	LD	18(39)* n = 46	8(35)* n = 23	2(25)* n = 8
		NOTLD	22(65) n = 34	32(56) n = 57	38(53) n = 72
Sample 2	LD	LD	14(48) n = 29	11(58) n = 19	2(33) n = 6
		NOTLD	10(45)* n = 22	13(41)* n = 32	22(49)* n = 45
	NOTLD	LD	15(52)* n = 29	8(42)* n = 19	4(67)* n = 6
		NOTLD	12(55) n = 22	19(59) n = 32	23(51) n = 45

[a]Numbers in parentheses are percentages. Entries with * are considered to be inaccurate decisions.

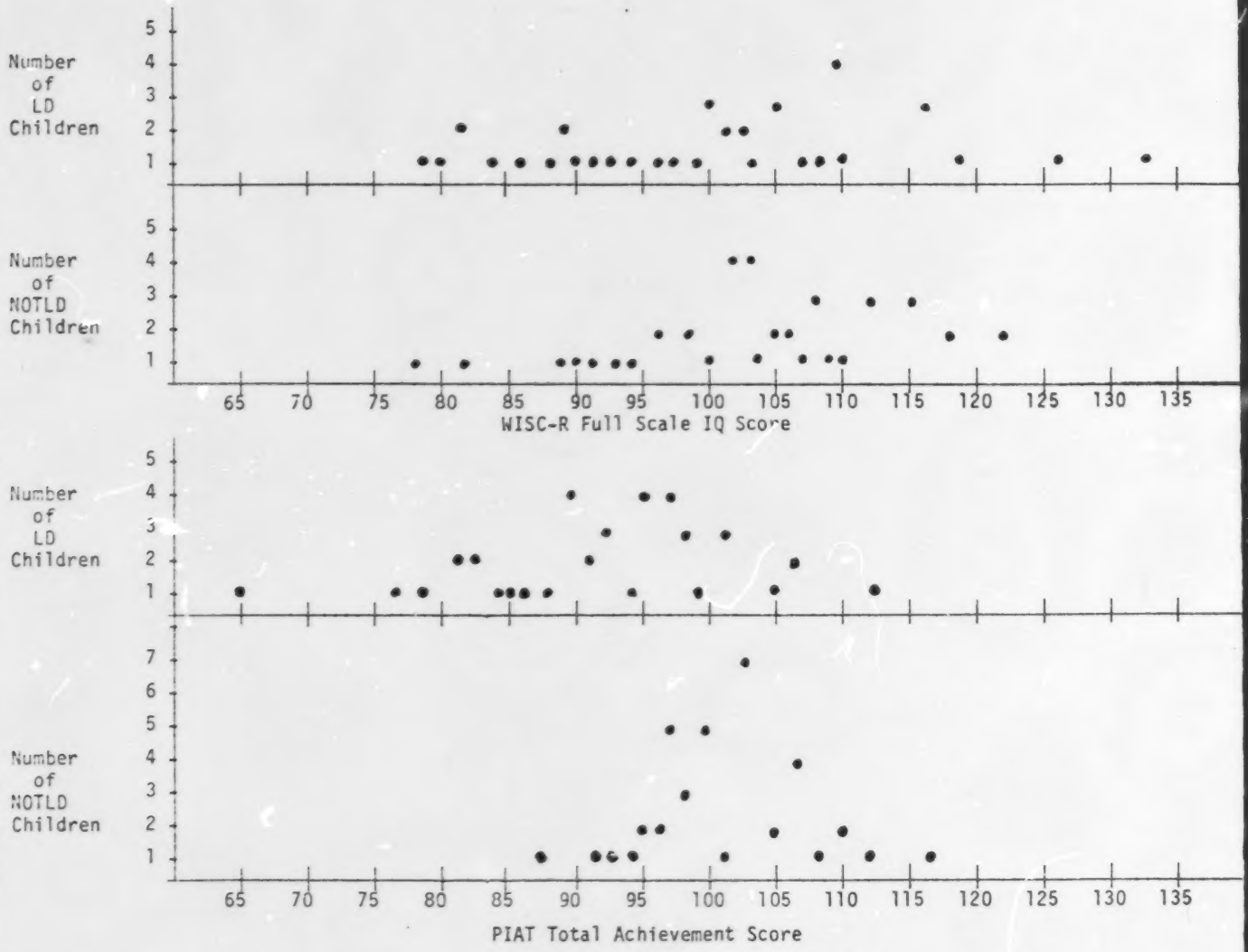
Number of LD Children
Number of NOTLD Children
WISC-R Full Scale IQ Score
Number of LD Children
Number of NOTLD Children
PIAT Total Achievement Score

Figure 1. Distribution of Ability and Achievement Scores.

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